

COMMONWEALTH OF MASSACHUSETTS

NORFOLK, SS.

SUPERIOR COURT DEPARTMENT
OF THE TRIAL COURT

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COMMONWEALTH OF MASSACHUSETTS,

v.

KAREN READ.

* * * * *

* Docket No. 2282CR00117

BEFORE THE HONORABLE BEVERLY CANNONE
FRIDAY, JUNE 21, 2024
TESTIMONY OF RICHARD GREEN

APPEARANCES:

For the Commonwealth:

BY: ADAM LALLY, A.D.A.
LAURA MCLAUGHLIN, A.D.A.

For the defendant:

BY: DAVID YANNETTI, ESQ.
ALAN JACKSON, ESQ.
ELIZABETH LITTLE, ESQ.

Dedham, Massachusetts
Room 25

Christine D. Blankenship, CVR
Court Reporter/Transcriber

**With Sidebar*

I N D E X

WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS
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Richard Green				
(By Mr. Yanetti)	3			
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Exhibits:	Page:
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652	Printout from CellHawk Program
653	Forensic Examination Report - John O'Keefe's Apple Health Data
654	Printout from Axiom Program - "Raining Men" Search
655	Cellebrite Extraction Report of Jen McCabe's 6:23 a.m. call to Brian Albert

1 (Court in session.)

2 (Defendant is present with counsel.)

3 (Jury in.)

4 THE COURT: All right. Mr. Yanetti.

5 MR. YANETTI: Thank you very much, Your Honor. The
6 defense calls Richard Green.

7 RICHARD GREEN, sworn

8 THE COURT: Good afternoon.

9 THE WITNESS: Good afternoon.

10 MR. YANETTI: May I proceed, Your Honor?

11 THE COURT: Yes.

12 **DIRECT EXAMINATION**

13 **BY MR. YANETTI:**

14 Q Sir, if you pull that microphone as close to your face
15 as you can so your voice will be kept up, and I'd ask you
16 to state your name and spell your last name.

17 A Sure. Richard Green. That's G-R-E-E-N.

18 Q And where do you live, sir?

19 A I now reside in Coldwater, Michigan.

20 Q What do you do?

21 A I own and operate a company called United States
22 Forensics.

23 Q And what is United States Forensics?

24 A Sure, we're a digital investigation firm. We have --
25 we're licensed in Florida and Michigan, but we do cases

1 across the country.

2 Q All right. And again, I'd ask you to keep your voice
3 up only because we have an air conditioner there, and we
4 have jurors behind me that need to hear you.

5 A Okay. I'll --

6 Q As best you can.

7 A -- do my best here.

8 Q Yeah, as best you can.

9 Now, you are president of that company, sir?

10 A I am.

11 Q In addition to managing the company, what do you do on
12 a day to day basis?

13 A Well, I perform the majority of the investigations. I
14 specialize in computer, cell phone, cloud, auto, video,
15 metadata media, surveillance systems, things of that
16 nature.

17 Q Do you work in conjunction with others?

18 A Certainly.

19 Q Would you describe that please?

20 A Certainly, well we do take cases from individuals. We
21 prefer to take cases from attorneys. So we've also worked
22 with numerous public defenders. We've worked with federal
23 public defender. We've worked with law enforcement. So
24 quite a variety of clientele.

25 Q Civil cases?

1 A Yep. Civil and criminal. I would put it about 60
2 percent criminals, 40 percent civil.

3 Q Okay. And with -- on the criminal side, you've done
4 both law enforcement and defense, correct?

5 A Yeah, most of the law enforcement ones, though, have
6 been more geared towards civil is when they had perhaps
7 they were party to a suit, and it was just improper for
8 them to use their own experts.

9 Q I see.

10 A So that's where we've provided assistance.

11 Q Now, how long have you been involved in the field of
12 data forensics, sir?

13 A Sure. Well, my first case and testimony was 28 years
14 ago. I'm not even sure we called it data forensics back
15 then, but that was 28 years ago. And then about 16 years
16 ago, started the company United States Forensics and been
17 full time in the industry since that point.

18 Q All right. Now, you'd mentioned that you'd actually
19 testified for the first time 28 years ago. That would have
20 been 1996 if my math is correct?

21 A That's correct.

22 Q You were qualified as an expert witness at that time?

23 A Yes, sir.

24 Q In order to have been qualified as an expert witness,
25 you must have had experience before that?

1 A Yeah, it was specifically in computers. We didn't do
2 much with cell phones back then. By about a decade or so in
3 computer IT, networking, we actually built a line of
4 computers, a lot of repairs. So I was pretty deep into the
5 computer IT world at that point.

6 Q And you say you formed your company in 2006?

7 A Correct.

8 Q And do you work full time, part time, what's your
9 schedule?

10 A It's been full time ever since.

11 Q Would you describe to the jury, please, your
12 educational background, your training certifications, et
13 cetera?

14 THE COURT: Why don't we break it down into smaller
15 sections?

16 MR. YANETTI: Sure.

17 A Okay.

18 Q First, with regard to your -- the training that you've
19 received.

20 A Sure, so the -- that would have to do with an
21 associates of digital forensics.

22 Q Well, that would be your education, right? You received
23 an associate's degree in digital forensics?

24 A Correct.

25 Q Okay. So why don't we start with education, since you

1 did.

2 A Okay. Well, that was -- that was part of the work and
3 more or less the formal training to get that degree, the
4 certifications, which, again, this all kind of goes hand in
5 Hand, but the certification training would be the CCE,
6 which is computer -- certified computer examiner from the
7 International Association of Criminal Investigation
8 Specialists. I also have a certification as a computer
9 crime related investigator cybersecurity as well as
10 computer first responder. The training aspects in over the
11 last 18 years on really a daily basis when I've worked,
12 I've participated in listservs, done research into the
13 newest developments in the computer forensics, and really,
14 on usually a weekly basis, will target some training
15 seminar. I found in this business, even if you took like
16 six months off, you would start to get behind in this
17 business. It changes that rapidly, and you really need to
18 do continual training.

19 Q Okay. And again, your voice trailed off a little bit
20 at the end so --

21 A I'm sorry.

22 Q I'm sorry to keep reminding you, but I just want to
23 make sure everybody hears.

24 With regard to the amount -- you know, your caseload at
25 USA Forensics, can you give the jury some idea of how many

1 cases you handle on a yearly basis or you've handled
2 historically?

3 A Yeah, we average I would say between 100 and 120 cases
4 a year. We probably get inquiries to about three times
5 that amount.

6 Q Okay. And have you testified as an expert witness in
7 the area of computer forensics since that 1996 first
8 appearance?

9 A Yeah, we've testified about two dozen times in various
10 state and federal courts.

11 Q Okay. And when you say various states and courts, is
12 that state court, federal court, both?

13 A Both.

14 Q Now, directing your attention to September of 2022,
15 were you contacted by somebody to become involved in this
16 matter?

17 A Yes, sir.

18 Q Do you remember who that was?

19 A I believe it was Ms. Little.

20 Q Okay. What were you asked to do?

21 A Well, there were three cell phones related to this case
22 and to provide relevance with the data on those phones as
23 it related to the incident on January 29, 2022.

24 Q Okay. And were you aware of the owners of those three
25 phones?

1 A Certainly. Karen Read, John O'Keefe, and Jennifer
2 McCabe.

3 Q Now, I'd like to ask you first, if I can, about John
4 O'Keefe's phone. How did you -- how did you receive the
5 data from that phone if you remember?

6 A Yeah, we received what's called an image file, and
7 that's a forensic term that we use. Essentially, it's a
8 copy of the data that's encapsulated into a single file. In
9 this case, it was a ZIP file.

10 Q Did you examine that data?

11 A I did.

12 Q What were your goals during your examination of John
13 O'Keefe's phone? What were you -- what were you looking
14 for? A Well, initially what was supported was the
15 location data. We wanted to get an idea of when he had
16 arrived, and anything else that we could tell from that as
17 far as location.

18 Q And when you say when he arrived, do you remember the
19 location that you were asked to learn when he arrived?

20 A 34 Fairview.

21 Q In Canton?

22 A Yes, sir.

23 Q All right. Were you able to determine, as a result of
24 your examination, approximately when his phone arrived at
25 34 Fairview Road according to the location data?

1 A Yes, sir.

2 Q And how did you do it?

3 A Sure. Well, we -- I say we, so that's a proverbial we.
4 I extracted the location cache data, which is stored in the
5 -- on your phone, and it's in the certain location. We
6 exported that out and then we use a tool called CellHawk,
7 and we import it in there, so it can take literally, you
8 know, thousands of data points and automate that process to
9 specific GPS locations, and just as importantly, the range
10 of accuracy that that location is reporting.

11 Q Okay. So according to the process that you underwent,
12 what time did the location data indicate that John
13 O'Keefe's phone arrived at 34 Fairview on January 29th of
14 2022?

15 A So the first one right to the driveway was at 12:24 and
16 28 seconds.

17 Q 12:24 and 28 seconds?

18 A Correct.

19 Q Now, if I asked you to filter John O'Keefe's location
20 data within an accuracy of 3 feet using CellHawk, could you
21 try to do that?

22 A Yes, sir.

23 Q In fact, did you try to do it?

24 A I did.

25 Q When?

1 A Last night.

2 Q Who asked you to do that?

3 A You did, sir.

4 MR. YANETTI: If I may approach, Your Honor?

5 THE COURT: Yes.

6 Q Sir, I placed a document before you. Could you
7 familiarize yourself with that and look up at me when
8 you're done?

9 A (Witness complies.) All right.

10 Q Do you recognize that?

11 A I do.

12 Q What is it?

13 A So this is a screenshot from the CellHawk program. It
14 has a kind of a central box here that says database
15 settings, and this is where we apply a certain filter.

16 Q And what filter did you apply?

17 A This was for the accuracy of less than or equal to 3
18 feet.

19 Q With regard to what?

20 A John O'Keefe's location data.

21 Q Is that an exact -- is the -- I'm sorry. Is the data
22 on that document exactly what you received when you, you
23 know, use the CellHawk program to filter the data?

24 A Yes, sir.

25 MR. YANETTI: I would offer that, Your Honor.

1 MR. LALLY: No objection.

2 THE COURT: No objection.

3 MR. YANETTI: Oh, I'm sorry. I thought you said
4 objection.

5 THE COURT: So you need to give it to Madam Court
6 Reporter.

7 MR. YANETTI: I'm all flustered. Sorry.

8 (Whereupon Exhibit No. 652, Printout CellHawk Program, was
9 marked as an exhibit.)

10 Q And if the witness could have that again.

11 A Thank you.

12 MR. YANETTI: With permission, I'd like to publish
13 that, Your Honor.

14 THE COURT: Okay.

15 Q So, Mr. Green, what are we looking at?

16 A So that is the screenshot from the CellHawk.

17 Q And what can you tell us about what you learned from
18 that exhibit?

19 A Well, I'll just use the pointer here. It might help.
20 You can see up in this part here where this is where we
21 apply the filter for 3 feet or less. That'd be the
22 accuracy, and then it actually returns zero results,
23 meaning all of the data within there had an accuracy rating
24 higher than that 3 foot. It could be 5 meters or 10
25 meters, but none of it was granular enough at a 3 foot or

1 less accuracy level.

2 Q Okay. And if you had to put in an accuracy of within,
3 say, 500 feet, what would you find?

4 A Yeah, you would see then a large number of circles,
5 each circle representing the meters that the accuracy would
6 be related to. But what's really important to understand,
7 though, is you don't want to look at just the middle of the
8 circle. That accuracy indicates it could be anywhere in the
9 circle. So if you saw one and it encompassed two or three
10 houses, you could only draw that inference of somewhere in
11 that circle. So it's a -- it's kind of like how the
12 hurricane, they say, don't -- don't just look at the cone,
13 right? Because it could be different than that.

14 Also, the accuracy. This is Apple's best guess what the
15 accuracy is. So it could actually be different than that.
16 It's Apple is using a number of services, and they're
17 giving back the best estimation that they can for the
18 accuracy.

19 Q Okay. So we've talked about the location cache data and
20 where it put John O'Keefe's phone in terms of arriving at
21 34 Fairview, but was there also Apple Health Data on John
22 O'Keefe's phone during that time?

23 A Certainly, yes.

24 Q Is Apple Health Data generally accepted within the
25 forensic science community as being reliable?

1 A Well, the Apple Health Data comes from something called
2 Health Kit, but it's integral to the iOS system. So anyone
3 that has an iPhone, you've probably seen Apple Health Data,
4 and what is known to have extremely valuable data that the
5 forensic tools work with and present to us. The degree of
6 accuracy, it depends on the type of data that's being
7 pulled out on the artifacts. For example, steps are known
8 to have an accuracy around 98 percent on the actual steps
9 occurring.

10 Q So if the Apple Health Data returns, for instance,
11 steps -- 20 steps within a certain time period, 98 percent
12 of the timeout was going to be right?

13 A That's what studies have shown.

14 MR. YANETTI: All right. May I approach the witness,
15 Your Honor?

16 THE COURT: Yes.

17 A You want this back?

18 Q Mr. Green, I've placed another document before you. Do
19 you recognize what that is?

20 A Yes, I do. This is a -- this lists out Apple Health
21 Data for -- that was from John O'Keefe's phone on January
22 29, 2022.

23 Q All right. That came from the data that you received,
24 the image file of John O'Keefe's phone, correct?

25 A That is correct.

1 MR. YANETTI: I would offer that, Your Honor.

2 THE COURT: Mr. Lally.

3 MR. LALLY: No objection.

4 (Whereupon Exhibit No. 653, Forensic Examination Report -
5 John O'Keefe's Apple Health Data, was marked as an
6 exhibit.)

7 MR. YANETTI: With the Court's permission, may I
8 publish that, Your Honor?

9 THE COURT: Okay.

10 Q Specifically, I'd like to start with page two, record
11 two.

12 Mr. Green, are you wearing the right glasses to be able
13 to see the scene -- the screen?

14 A Yeah, I probably need bifocals here. I keep switching
15 glasses, but --

16 Q Are you able to read what is on the screen? And if
17 it's easier, you can look on your document in front of you.
18 It's page two, record two.

19 A Yeah, you know, I think I'm going to have to do that. I
20 can probably still see good enough to do the laser one. I'm
21 sorry, which record is this --

22 Q I'm looking for page two, record number two.

23 A Okay. Yes, I have that in front of me.

24 Q Okay. What does record number two show on page two of
25 John's Apple Health data?

1 A Sure. So this is the number of meters. It's listed as
2 87.74 and the time is listed between 12:21 and 10 seconds.
3 And there's a milliseconds after that, but I'll just round
4 it off to the second, if you don't mind. So 12:21 and 10
5 seconds to 12:24 and 22 seconds.

6 Q Okay. And you said that it showed 87 meters traveled
7 during that time period?

8 A Correct.

9 Q And with regard to that same time period 12:21 and 10
10 seconds, and 12:24 and 22 seconds, please turn to page 5.
11 And, Mr. Bates, if you would zoom in on record number two.

12 A I have that.

13 Q Okay. What does record number two reflect?

14 A It is the same time period and the steps taken is
15 recorded as 80 steps.

16 Q Okay. And you said the same time period. So again,
17 12:21:10 to 12:24:22, correct?

18 A Correct.

19 Q All right. Now I'd like to direct your attention to
20 page four, record number one. And, Mr. Bates, if you could
21 post that.

22 And you're ready, Mr. Green, if you could tell the jury
23 what that reflects.

24 A Sure. So this indicates three sets of floors that
25 represents elevation change. So it doesn't indicate to us

1 up or down, but three steps in the time period for that is
2 12:22:14 to 12:24:37.

3 Q Okay. Did you say 12:21:14 to 12:22 -- I'm sorry --
4 12:24:37?

5 A Yeah, yeah. 12:22:14 to 12:47:37.

6 Q I see.

7 A Yes.

8 Q And with regard to all of this data, the eighty steps
9 and the three flights of stairs that you mentioned, is it
10 possible to pinpoint where within the time frame that's
11 given those steps or flights of stairs were ascended or
12 descended? A No, the most granular we can get is the time
13 period, and it doesn't -- it doesn't signify as any more
14 likely at the beginning of the time period than at the end
15 of the time period than at some time in the middle. If you
16 think logically, like distance traveled, that doesn't
17 happen at a split moment. It happens over a curt period of
18 time. So it's -- time is a factor in that equation, and
19 this is how the Apple records that data. You got to look at
20 the time overall. Q Okay. So you don't know if it's the
21 steps are bunched up toward the beginning or toward the
22 end, or more evenly spread out?

23 A No, I would not be able to tell you that.

24 Q All right. Now, we've discussed the Apple Health Data.
25 I want to go back for a second to talk about the location

1 data on the iPhone. Does that data that you've already
2 talked about in terms of the arrival time that it gave for
3 John O'Keefe's phone at 34 Fairview, does that arrival time
4 fall within or outside the range of 12:21 and 10 seconds or
5 12:20 -- 12:21 and 10 seconds and 12:24 and 37 seconds?

6 A Well, there is -- there certainly indicates an overlap,
7 but it -- the health data is ending after the arrival and
8 we can ...

9 Q Now, I'd like to discuss with you the concept of clocks
10 used by apps on an iPhone.

11 A Sure.

12 Q Are you aware of the three different clocks that are
13 used by iPhone apps?

14 A I am.

15 Q What are they?

16 A We have -- so we have three separate internal clocks.
17 You have a monotonic clock, a base band clock, and a wall
18 clock.

19 Q Okay. And is the wall clock also called the display
20 clock?

21 A Yeah, that would be also a common name for that.

22 Q And what is the significance of the existence of three
23 clocks regarding, you know, different times that may show
24 up within these records?

25 A Sure. Well, app developers can access Apple program

1 library and they can call upon any of the clocks to use
2 within their apps.

3 Q Okay. Now, in your investigation and examination of
4 this case, did you find examples on this phone of different
5 clocks being used?

6 A So in this particular case, I had reprocessed the data
7 with the newest version of the Axiom forensic program. It's
8 similar to Cellebrite or competitors to Cellebrite, and
9 it's -- we use both programs. And this newest version had a
10 feature in there where you can filter for the Waze
11 application. And again, just following up and seeing how
12 this function would filter for the Waze application, and
13 for the first time, we saw this monotonic timestamp being
14 related to the Waze application.

15 Q Okay. I want to show you Exhibit 640.

16 MR. YANETTI: If I approach, Your Honor?

17 THE COURT: Sure.

18 Q I've placed Exhibit 640 before you, sir. Do you
19 recognize what that is?

20 A Yes, sir.

21 Q What is it?

22 A So this is a screenshot from the Magnet Axion Program I
23 was referring to it. It's the 8.1 -- actually, point looks
24 like four two eight --

25 Q Keep your voice up, sir.

1 A I'm sorry, yeah. So it's the newest version of the
2 program. And we have a filter for the Waze app, and it's
3 giving us the time stamps associated with it.

4 MR. YANETTI: With the Court's permission, may I
5 publish that?

6 THE COURT: You may.

7 A There we go.

8 Q And first of all, are you -- no, that might be probably
9 too small?

10 A Okay. Thank you. I'll go off of this one.

11 Q There we go. With regard to what we are looking at
12 there on that part of the screen, what are we looking at,
13 Mr. Green?

14 A Okay. So this is listing details of this particular
15 artifact, and you can see that this is bundled at the
16 com.Waze on iPhone. That's a standard bundle type name
17 where it always starts with com dot and then the
18 application reference.

19 Q And what does that mean? When it says -- it's
20 highlighted on the screen, com.dot.waze.iPhone, what does
21 that mean that we're in right now?

22 A Yeah, well, this is an artifact specifically related to
23 the Waze program.

24 Q The Waze app?

25 A Yes, sir.

1 Q All right. Go on.

2 A Okay. And we can see here our entry for the monotonic
3 time, the baseband time, and the display time.

4 Q And what did you notice about the relationship of the
5 three of those?

6 A Certainly. Well, most of us -- well, there's the
7 monotonic is running a little over three minutes ahead of
8 the display, so I think it's three minutes and one second
9 give or take a little. So, you know, in a lot of cases,
10 three minutes may not seem like much, but in this case,
11 this struck me as important to --

12 MR. LALLY: Objection. Move to strike.

13 THE COURT: Sustained. I'm going to strike that. Next
14 question.

15 THE WITNESS: I apologize.

16 THE COURT: That's okay.

17 Q You can hand that back to Madam Court Reporter.

18 A Certainly.

19 Q And I'd like to go back to the Apple Health Data, Mr.
20 Bates. If you could put that back up.

21 MR. BATES: What page?

22 MR. YANETTI: This was to be page two, record number
23 three.

24 Q And do you -- you don't still have that in front of
25 you, do you?

1 A Actually I do.

2 Q You do?

3 A I do. Page two, record number three, sir.

4 A Yes, sir.

5 Q What does that show?

6 A All right. Okay. So this is another entry from John
7 O'Keefe's data, cell phone data, and this records 25 meter
8 -- 25.46 meters occurring between 12:31:56 and 12:32:16.

9 Q Okay. And directing your attention to page five, record
10 number three, if you could tell the jury what that shows,
11 and if we can have that displayed as well, Mr. Bates?

12 A Certainly. So this is directly related to the distance,
13 and this is recording 36 steps. And it's the same time
14 period 12:31:56 to 12:32:16.

15 Q Okay. So we have 36 steps being taken according to
16 Apple Health Data on John O'Keefe's phone for a time period
17 that ends at 12:32:16?

18 MR. LALLY: Objection.

19 THE COURT: Sustained. Ask it differently.

20 Q With regard to those 36 steps, do we know where within
21 that time frame they were taken?

22 A Sure, let me -- let me reread that here. We -- January
23 29, 2022, 12:31:56 a.m. It's actually 12:3156.109 a.m. and
24 12:32:16.507 a.m.

25 Q Okay. All right. So now I'd like to switch, if we can,

1 to Jennifer McCabe's phone and your analysis of that.

2 During the course of your examination when you reviewed
3 data from her phone, did you find a particular artifact of
4 interest?

5 A Yes, I did.

6 Q What did you find?

7 A We found a Google search that happened. First of all,
8 the search was "hos long to die in cold" and it happened at
9 or before 2:27 a.m.

10 Q All right. Where was that search found?

11 A So that the artifact on that was called a Safari
12 suspended tabs artifact, and there's a database associated
13 with that called the browser DB database, and in a company
14 file, which is by the same name, but ends in WAL, which
15 stands for write ahead log. And the write ahead log is
16 where the data first gets written to, and then at certain
17 points, that data then gets committed and written to the
18 main database.

19 Q All right. So that, if I'm correct, that browser
20 state.db/wal file, that's a temporary file, right?

21 A It's temporary by nature, but it's not -- that's not to
22 -- it's integral. It's part of the way the SQLite
23 functions. So it's not like a throwaway file. It's part of
24 the way the whole system works.

25 Q And is it helpful to you when evaluating artifacts?

1 A Certainly, yeah. The -- just by nature of it, we'll
2 find a lot of the newest artifacts in that WAL file.

3 Q Now, how do you determine the timing in terms of the
4 time stamp on the browser state.db WAL file?

5 A Sure. So the WAL file has different rows and columns.
6 You can kind of think of it as an Excel spreadsheet. And in
7 this one particular column had a -- it was a time column
8 that'd be the nature of the data going into it. And this --
9 the heading on this particular one was last viewed time.

10 Q Okay. Regarding that Google search for "hos long" and I
11 say hos long, H-O-S long to die in cold --

12 A Right.

13 Q -- found in the browser state DB WAL file, what was the
14 date and time for that artifact?

15 A Sure. So that's recorded in what's called aplicacao
16 time, and it's actually the number of seconds since January
17 1, 2001. So you end up with this large number, and that
18 gets converted to present to us something that's human
19 readable and then you have to apply the offset for the
20 local. So once you do all those calculations, we -- that's
21 where we get the January 29, 2022 at 2:27 --

22 Q Okay.

23 A -- in the morning.

24 Q And the specific, do you remember the number of seconds
25 after --

1 A I believe it's 40 seconds.

2 Q Two twenty-seven forty seconds?

3 A Yeah.

4 Q Okay. And in what state did you find that artifact?

5 A Yeah, so the specific artifact or it comes from a
6 record, and the record number on this is 4028 I believe,
7 and it was in a deleted state.

8 Q Okay. Now, what would you normally expect to find
9 along with the artifacts, sir?

10 A So you'd have the date and time, the URL, which the way
11 the URL presents itself we know that as a Google search,
12 but you also see a history of other places that tab has
13 been.

14 Q And with this particular artifact, did you learn the
15 full Internet history of websites related to that record?

16 A No, that wasn't possible. We were only able to get the
17 one website. I would say --

18 Q And --

19 A I'm sorry, go ahead.

20 Q No, I interrupted you.

21 A So we definitely got the one artifact, the Google
22 search, and we have the time related to it, but we do not
23 know everywhere else that tab had been.

24 Q Okay. What significance was there to you about the fact
25 that the full Internet history related to that record could

1 not be recovered?

2 A Well, I wanted to do a little deeper dive into that,
3 and so I used some various other database specific tools.
4 One was called Belkasoft X, which has an excellent database
5 viewer in it. Sanderson Forensics, which is known to
6 specialize in this type of work, and --

7 Q ArtEx?

8 A I'm sorry?

9 Q ArtEx?

10 A You saved me, yes, ArtEx, which is a program known in
11 the community for research.

12 Q And how did you sort of cross-reference the three of
13 those together. How do you use them?

14 A Yeah, so all three of those tools, along with Axiom and
15 Cellebrite, which I did -- they do have a low level SQL
16 viewer as well. So I looked at the data with all five of
17 those tools, and I found it to be consistent amongst all
18 the tools.

19 Q And in addition to using those tools, what else did you
20 do?

21 A So I wanted to get a little more context. One thing to
22 with this artifact, it is deleted. And one thing about
23 deleted data, sometimes you get it all back, sometimes you
24 don't, sometimes you get a fragment. Deleted data makes it
25 very difficult to give you the whole picture of what's

1 happening. So in this particular case, I wanted to see how
2 -- what other artifacts were around this time as it related
3 to web history and particularly this browser database file.

4 Q And so what do you compare the 2:27 a.m. search to in
5 order to gain more information?

6 A Exactly.

7 Q I'm sorry.

8 A What the information was? So what we found is that
9 when we looked at a particular URL, a particular website
10 that was visited, and then search using that URL, the
11 browser state database entry is the last entry in all of
12 that. So we could see searches, videos playing, there's an
13 artifact called Knowledge C that records the user's
14 activity, but the browser state is the very last entry on
15 the items that we observed.

16 Q And did you find other examples of that that you can
17 speak to before this jury?

18 A Yes, I believe we have one printed out there.

19 MR. YANETTI: Okay. May I approach, Your Honor?

20 THE COURT: Yes.

21 Q I've placed a document before you, sir. If you could
22 familiarize yourself with that and look up me when you're
23 done.

24 A I have it.

25 Q What is it?

1 A Okay. So this is another screenshot from the Axiom
2 program, and it is showing a search that we conducted for
3 "Raining Men" and then it takes that search, and we have a
4 couple different items on there. We set the date to begin
5 in 1970 ending in 2100. In other words, we only want to
6 see artifacts that had dates associated with them. And then
7 we listed them from the newest date to the oldest date. And
8 this particular one, again, it ends up with the Safari
9 suspended tabs artifact being the very last in the series
10 of dates and times.

11 MR. YANETTI: All right. I'd like to go through that,
12 but first I'd offer it into evidence, Your Honor.

13 THE COURT: Any objection?

14 MR. LALLY: No, Your Honor.

15 (Whereupon Exhibit No. 654, Printout from Axiom Program -
16 "Raining Men" Search, was marked as an exhibit.)

17 MR. YANETTI: And with the Court's permission, may it
18 be published, Your Honor, at this point?

19 THE COURT: Yes.

20 Q Okay.

21 A Okay.

22 Q So we have a number of calls here. Could you explain to
23 the jury what's going on with that, et cetera?

24 A Certainly. So I'm going to switch glasses out back
25 here. Forgive me.

1 THE COURT: Do you need the light on, sir, are you --

2 THE WITNESS: No, I'm fine, Your Honor. Thank you much.

3 I can -- I can certainly do this.

4 A So we are looking at here web related history. And
5 also, I had the filter turned on for application usage
6 because there are some log files, sort files that the
7 iPhone keeps track of to record user interactions, and that
8 can give us an idea of the history as well. And then, as I
9 mentioned, we have it filtered, so that's only showing
10 dates, that dates existed, and we took the earliest
11 possible date to a date way in the future, and then it's
12 listed, and next to the date and time, you'll see a little
13 arrow, and it's skinny at the top and big at the bottom.
14 That tells you it's going from small -- earliest time to
15 latest time, and this particular view is showing us the
16 last of that series because what's relevant and really
17 important here is that the Safari suspended state tabs ends
18 up being the last of the entries related to that, not one
19 of the beginning of the entries related to that.

20 Q And what is the significance of this -- the Safari
21 state tab being the last entry? What does that tell you?

22 A Well, so it tells us the Internet history happened for
23 that and the purpose of this tab on at least this
24 particular iPhone with this very specific iOS version is to
25 record the state of that tab when the user left that, and

1 the whole purpose of that is, if you're on Safari, you're
2 on a website and say you have to take a phone call or
3 answer a text message and you navigate away from the Safari
4 app, when you come back, it remembers where you were and
5 allows you to pick off from there. It also allows you to
6 hit the tab button and see what other tabs you might have
7 open and navigate to one of those tabs.

8 Q All right. So as I see the last tab, am I correct that
9 the time is 1/29/22, the same day at 2:27 and 38 seconds?
10 Is that what it says on your --

11 A I'm definitely getting a pair of bifocals. I apologize
12 here. I feel a little silly. Yes, yes, on this particular
13 one. So that is just moments before the Google search
14 artifact.

15 Q The one that you previously talked about the hos
16 long --

17 A The hos long to die in the cold, yes.

18 Q All right. But all the other history of this particular
19 artifact was before that time, correct?

20 A Correct.

21 Q So with regard to what that tells you about when the
22 "It's Raining Men" is either searched or accessed, was that
23 after or before 2:27 and 38 seconds?

24 MR. LALLY: Objection.

25 A I'm sorry. Can you --

1 THE COURT: Sustained.

2 A Okay. If you say it one more time.

3 THE COURT: Ask it differently.

4 Q All right. Let me try and put it a different way.

5 Given the time stamp which 2:27 and 38 seconds on January
6 29, for that Safari suspended state tab with the "It's
7 Raining Men", what did that tell you about the timing of
8 when "It's Raining Men" was accessed by the user?

9 A Well, so the indications would be that that tab was
10 brought up and then went away from to add to do another
11 tab. So it can happen less than a second. It doesn't take
12 long to open up a tab and start a new tab. It can be done
13 very quickly.

14 Q I guess I'm not really phrasing this the right way to
15 get I want. What I want is the timing of the interaction
16 with "It's Raining Men" by the actual iPhone user. When did
17 that happen?

18 A Certainly. All the activity that we have is all prior
19 to the recording of this -- of that time stamp --

20 Q Okay.

21 A -- in the browser state.

22 Q All right. Now, with regard to this particular example
23 where the browser state DB is, the last entry, so the
24 activity happened before, was that unique to on this phone,
25 or was -- were there many examples of this?

1 A No, I found many examples of this exact behavior.

2 Q All right. Now, given your findings in researching
3 these issues and how this user used this iPhone with this
4 iOS, do you have an opinion to a reasonable degree of
5 scientific certainty as the time -- as to the timing of
6 that search for, "hos long to die in cold?"

7 MR. LALLY: Objection.

8 THE COURT: Sustained.

9 Q Do you have an opinion to a reasonable degree of
10 scientific certainty as to when "hos long to die in cold"
11 was searched?

12 MR. LALLY: Objection.

13 THE COURT: Sustained, I can see you at sidebar.

14 MR. YANETTI: Thank you.

15 (Sidebar commences:

16 THE COURT: The nature of the objection.

17 MR. LALLY: Reasonable degree of scientific certainty.
18 I don't think this witness is qualified to give that kind
19 of opinion.

20 THE COURT: I agree.

21 MR. YANETTI: Why would that be? I mean he's been
22 working --

23 THE COURT: You haven't qualified him anywhere in there
24 an expert to scientific degree certainty.

25 MR. LALLY: If I can clarify, Your Honor, I have no

1 issue with counsel asking him what his opinion is.

2 THE COURT: Right.

3 MR. LALLY: Qualifying him in those terms, I don't
4 think is appropriate.

5 MR. YANETTI: Okay. Well, I'll take it if I can't get
6 the --

7 THE COURT: You cannot get the scientific certainty
8 from this witness from the testimony I've heard. Okay.
9 end of sidebar.)

10 THE COURT: So we're all set, Mr. Yanetti.

11 MR. YANETTI: Yes, Your Honor.

12 Q Okay, sir. Do you have an opinion as to the timing of
13 that first search for "hos long to die in cold"?

14 A Yes, I do.

15 Q What is that opinion?

16 A That that would have happened at or before January 29,
17 2022, at 2:27:40 a.m. in the morning.

18 Q And what is the basis for your opinion?

19 A Again, by how this particular phone operates with that
20 exact operating system, and comparing to other data on that
21 phone and the way it presented it out -- itself is all
22 consistent with that search happening at or before that
23 time.

24 Q And what opinions or conclusions did you reach
25 regarding how, if any, how the 2:27 a.m. search was

1 deleted?

2 A Well, we know that that's in a deleted state, and
3 importantly, on that phone is we -- I (indiscernible) I use
4 the proverbial we. I found a lot of other -- that would
5 have been used or deleted artifacts between midnight and
6 the early mornings on January 29, 2022.

7 Q Okay. Are you aware of any internal mechanisms that
8 could have caused that deletion?

9 A No, not -- not in this particular case. I know of no
10 mechanism that would've that.

11 Q All right. And you mentioned deletion -- other
12 deletions on the phone. I want to show you what has been
13 marked, if I may approach, Your Honor, MMM for
14 identification. Do you recognize what I've placed before
15 you, sir?

16 A Yes, sir.

17 Q What is it?

18 A This is from Cellebrite. It's a program, again, like
19 the Axiom that processes data, and this is a -- this lists
20 out a -- that's a 623. This lists out a deleted call
21 record.

22 Q Okay. Are you able to see from that record to whom the
23 call was placed?

24 A Yeah, well, we have the number, and I won't necessarily
25 read it out loud here, but through searching -- and this is

1 from the phone of Jeffrey McCabe.

2 Q Yep.

3 A But through searching for that -- the number, I was
4 able to see that it went to -- do you want me to say the
5 name?

6 Q Sure.

7 A Yeah, Uncle Brian A.

8 MR. YANETTI: Okay. I would offer that into evidence,
9 Your Honor.

10 MR. LALLY: Same objection as before, Your Honor, as
11 when this was -- may we approach?

12 THE COURT: Okay.

13 (Sidebar commences:)

14 MR. LALLY: Sorry. I just wanted to clarify. So it's
15 the same objection as before as to the previous time when
16 this particular item was offered as an exhibit, and that
17 being that this is a one random piece pulled out of a phone
18 extraction with no context, no content --

19 THE COURT: So we needed to find, like, what exhibit
20 number it is.

21 MR. YANETTI: I've got it. That's where I'm going next.

22 THE COURT: Okay. I would have liked to have known that
23 first. We wouldn't have had to come to sidebar.

24 MR. YANETTI: No, I understand. I was going to get it
25 in a -- maybe I should've done it the reverse way. I

1 should have introduced the full log and then --

2 THE COURT: The full log's in evidence, right?

3 MR. LALLY: I believe so.

4 THE COURT: It's the extraction of --

5 MR. YANETTI: You mean the call log of Jennifer McCabe.

6 I wasn't sure that it was in evidence. I got it -- I have
7 it right now and was going to introduce it. If it has an
8 exhibit number, I'd prefer to use that, obviously.

9 MR. LALLY: Right. And that's what I would prefer.

10 MS. LITTLE: Is that it? You have it.

11 THE COURT: So I can't hear you at all, Ms. Little, and
12 I don't know if you're saying something into the record, or
13 if you're just informally talking to Mr. Lally.

14 MS. LITTLE: Sorry. I didn't mean to interrupt. I
15 just wanted to see if we could see the actual exhibit
16 because I don't think it's been presented in court.

17 MR. LALLY: Again, I didn't look for it yesterday, and
18 I apologize for that.

19 THE COURT: So it's Jen McCabe's call log?

20 MR. YANETTI: Yes.

21 THE COURT: Troy.

22 (The Court and Court Officer confer.)

23 THE CLERK: Ninety-eight and ninety-nine.

24 MR. YANETTI: Okay. I just want to make sure it's what
25 I have. If I can take a look at it.

1 THE CLERK: And 94, 95.

2 THE COURT: Ninety-four and ninety-five.

3 THE CLERK: Also.

4 THE COURT: Also.

5 MR. YANETTI: I wonder if it was piecemeal.

6 MR. LALLY: It was.

7 THE COURT: All right. So I'm just going to let you put
8 that in.

9 MR. YANETTI: Okay.

10 THE COURT: It'll have its --

11 MR. YANETTI: All right. Thank you.

12 end of sidebar.)

13 THE COURT: So, folks, we're trying to streamline the
14 exhibit numbers. It looks like this may already be in
15 evidence. It's got four different numbers, so I sort of
16 wanted to keep it with that. We are so far removed from
17 where it was that this will just come in as the next
18 exhibit. So you will technically have it in evidence
19 twice.

20 (Whereupon Exhibit No. 655, Cellebrite Extraction Report of
21 Jen McCabe's 6:23 a.m. Call to Brian Albert (formerly MMM
22 for ID), was marked as an exhibit.)

23 MR. YANETTI: Thank you. May I approach again, Your
24 Honor?

25 THE COURT: Yes.

1 Q And I've placed one final document before you. If you
2 can identify that for the jury, please?

3 A Yes. This is another report generated out of
4 Cellebrite. It's based on Ms. McCabe's cell phone data, and
5 this lists out the call log with a number of deleted items
6 and number of live items.

7 MR. YANETTI: I would offer that, Your Honor.

8 MR. LALLY: If I get to see.

9 MR. YANETTI: Sorry.

10 MR. LALLY: I think it's already in evidence as well.

11 MR. YANETTI: Actually, it's -- I confirmed it's not.
12 It's not yet in evidence. We looked at the exhibits that
13 were specified.

14 (Whereupon Exhibit No. 656, Cellebrite Extraction - Jen
15 McCabe's Call Log, was marked as an exhibit.)

16 MR. YANETTI: Thank you. If you could hand that to the
17 witness, and if I could have you the first of that exhibit
18 displayed.

19 Q Okay. With regard to that exhibit, Mr. Green, what did
20 you find that was unusual, if anything?

21 MR. LALLY: Objection.

22 THE COURT: Sustained. Ask it differently, Mr.
23 Yanetti.

24 MR. YANETTI: Yes.

25 Q What did you find of note?

1 A Certainly. What was the time frame of the deleted
2 records. Now, I'll just talk about this particular report
3 here. It starts at 5:33:47 in the morning, and on the
4 second page we see it ends at 8:50 and 15 seconds, again,
5 a.m. And then the normal recalls, what we call live data,
6 then begins at 8:59 and 34 seconds, and goes on throughout
7 the day with no more -- with no additional deletions.

8 Q And am I right that those are all in fact calls --
9 those are all phone calls?

10 A Correct. Yeah, this is a call log.

11 Q And what was the difference between the calls that were
12 at 8:59 and after on January 29, 2022, and the calls that
13 were before -- after or before 8:50 a.m. on January 29th of
14 2022?

15 A Yeah, well, it's the state they were found in.

16 Q And --

17 A Deleted versus live data.

18 Q I'm sorry?

19 A Deleted data at the earlier time and live data after
20 the 8:59:34.

21 Q What percentage of phone calls were found deleted on
22 Jennifer McCabe's phone prior to 8:50 a.m. on January 29?

23 THE COURT: All right. I have to see you. Take this
24 down for a minute, please. I have to see counsel.

25 (Sidebar commences:

1 THE COURT: So unlike the other exhibits, none of these
2 phone numbers are redacted.

3 MR. YANETTI: Okay.

4 THE COURT: And they've just been displayed on
5 television.

6 MR. YANETTI: I wasn't aware of that. We'll have to
7 redact them.

8 THE COURT: But you put it in.

9 MR. YANETTI: No, I understand. I wasn't concentrating
10 on that. I apologize. I didn't mean to do that.

11 THE COURT: So you're no more displaying this --

12 MR. YANETTI: That's fine.

13 THE COURT: -- exhibit.

14 MR. YANETTI: We're done.

15 THE COURT: And I'm going to take it from your witness
16 now.

17 MR. YANETTI: Okay.

18 end of sidebar.)

19 THE COURT: Sir, may I have that exhibit, please?

20 THE WITNESS: Yes.

21 (Sidebar commences:

22 THE COURT: Tony should not have to find this. I
23 couldn't see from a distance what the numbers were, but if
24 you intend to put anything into evidence, the number is
25 supposed to be redacted --

1 MR. YANETTI: Of course.

2 THE COURT: -- before it goes into evidence. This
3 shouldn't happen, especially this late in the game. All
4 right. So that needs to be redacted. It'll be right here
5 on my desk. You're not to refer to it or display it
6 anymore.

7 MR. YANETTI: Can I ask questions about the content of
8 it without displaying it and without talking about the
9 particular phone numbers? I just want to conclude my
10 examination.

11 THE COURT: Yes.
12 end of sidebar.)

13 Q So, Mr. Green, I'm not sure if that question was clear,
14 or if you understood it. If it's not, please let me know.
15 But I had asked you from the first recorded call there that
16 was listed as deleted until 8:50 a.m. or so, what
17 percentage of calls were deleted on Jen McCabe's phone
18 within that time period?

19 A So we found no live data, so 100 percent of them would
20 have been deleted.

21 Q Now, are you aware of the term spontaneous deletion?

22 A No, sir. I know what the individual words mean, but in
23 relation to digital forensics, I'm not familiar with that
24 term.

25 Q And do you have an opinion as to how those calls would

1 have been deleted from that phone?

2 A Those who have been user deleted.

3 MR. YANETTI: If I may have a moment?

4 THE COURT: Sure.

5 MR. YANETTI: I have no further questions. Thank you,
6 sir.

7 **CROSS-EXAMINATION**

8 **BY MR. LALLY:**

9 Q Good afternoon, sir.

10 A Good afternoon, sir.

11 Q Now, do you know who a Ms. Jessica Hyde is?

12 A I do.

13 Q Are you aware that she wrote a report in relation to
14 this case?

15 A Yes.

16 Q And specifically, in regard to the Google searches from
17 Ms. McCabe's phone that you were just talking about?

18 A Yes, sir, it was very specific about that search.

19 Q And have you had a chance to review that report?

20 A I have.

21 Q You also know who a Ian Whiffin?

22 A Certainly, yes.

23 Q And are you aware that he wrote several reports or
24 submitted several items in relation to, again, the exact
25 topic that you're testifying about in relation to the

1 Google searches on Ms. McCabe's phone?

2 A Yes, sir, I understand that.

3 Q And have you had a chance to review those materials as
4 well?

5 A Yes, sir.

6 Q And you understand that they both disagree with what
7 your opinion is in relation to those searches, correct?

8 A I absolutely understand that, sir.

9 Q Okay. Now, just as far as your qualifications and
10 certifications go, I'm just having a difficult time. From
11 the certifications that you have, at what point were you --
12 well, what if any certifications do you have with reference
13 to Cellebrite as a tool as far as your use and
14 interpretation of data from Cellebrite?

15 A Certainly. So my certifications are much more broad.
16 They have to do with a lot of the fundamentals in how we
17 conduct the investigations, and what tools we should know,
18 and when we need to know we need to do more work and such
19 like that. Cellebrite, I do not have any specific
20 Cellebrite certifications. They offer many of them,
21 however, I -- I've participated in, god, I can't even
22 count, hundreds of their training events that they offer,
23 both Cellebrite, Axiom, Belkasoft, they all provide the
24 community with fantastic support as far as that. And
25 although certainly a class can be very good, but you really

1 need to stay up to speed, you've got to participate in the
2 most recent understanding being put out there. Even in the
3 changes of their tools, will change from one version to
4 another.

5 Q And so to the point as far as you have no
6 certifications in regard to Cellebrite as a tool and how to
7 use it, those kind of things?

8 A That's correct, sir.

9 Q Okay. And in this specific instance, at any point did
10 you reach out to Cellebrite to go over sort of your
11 findings
12 or your opinions in relation to this search?

13 A I did.

14 Q And who, if anyone, did you speak with from Cellebrite?

15 A As close as I can remember, I know it was Leo and I
16 believe it was Santos.

17 Q And do you know what part of Cellebrite they work in
18 and what they do?

19 A Well, he was in the technical support and contacted
20 him. He had informed me that they had elevated this up the
21 -- to some higher level technical support when they came
22 back. His comments to me, when I hear them, was that
23 this --

24 Q I didn't ask for his comments.

25 A Okay. I understand.

1 Q But at some point you talked to technical support; is
2 that correct?

3 A Absolutely.

4 Q And they indicated that they would refer you to
5 actually Mr. Whiffin's team?

6 A No, sir, they did not.

7 Q So you weren't told that you were referred to Mr.
8 Whiffin's team, and you weren't contacted by anyone from
9 Mr. Whiffin's team?

10 A No, and I forget the exact date. A couple weeks ago,
11 maybe a month ago, out of the blue, I got an email from Mr.
12 Whiffin saying and I can't -- I don't want --

13 Q I'm not asking you --

14 A I don't want to misquote him.

15 Q No, no, no. And I'm not --

16 A Certainly --

17 Q -- I'm not asking you about any specific conversations
18 that you had.

19 A Okay.

20 Q What I'm asking and I'm asking about a time period more
21 back in 2022.

22 A I'm sorry. I couldn't quite hear you.

23 Q Back in 2022, did you reach out to Cellebrite in
24 relation to this search and your opinions related to it?

25 A Yes, sir.

1 Q And at that point was that the point that you spoke to
2 someone from technical support?

3 A Yes, sir.

4 Q And at that point, did someone from technical support
5 actually refer you or tell you that they were referring you
6 to Mr. Whiffin's team?

7 A No, sir, I had absolutely no idea about that.

8 Q And so no one from Mr. Team -- no one from Mr.
9 Whiffin's team reached out to you, and then you just never
10 called them back. That didn't happen?

11 A Not that I'm aware.

12 Q Now, you were asked to look at a couple different
13 phones, and I'm assuming by counsel for the defendant,
14 correct?

15 A Can you say that once again? I'm sorry.

16 Q Sure. You were asked to look at three different phones
17 is what your testimony was?

18 A Correct.

19 Q And I'm assuming that was by some counsel for the
20 defendant, correct? No one else asked you to look at these
21 phones, correct?

22 A Oh, correct. Yes, it was from the defense asked me to,
23 yes.

24 Q And so the phones that you were asked to look at where
25 Mr. O'Keefe's phone, the defendant's phone, and Ms.

1 McCabe's phone, correct?

2 A Correct.

3 Q Now, as far as Kerry Roberts's phone, were you ever
4 asked to look at that?

5 A No.

6 Q And with respect to the defendant's phone, was there
7 any GPS location information or data that you observed in
8 her phone?

9 A So we had an indication that location had been using.
10 There was something called Apple map tiles, and those
11 probably when you use the Apple map app that it in order
12 for it to work, it will create these little tiles or little
13 pieces of pictures, and they get stitched together to give
14 you the view that you see on your phone.

15 Now, for that had to be working, we know location data
16 had to be working. This particular location data, the
17 location data cache, is known to only be present on the
18 phone for a couple weeks. Now, what I don't know -- and,
19 Mr. Lally, if I'm going too far, just please stop me. What
20 I don't know, what measures were taken to preserve that
21 data, whether it was put in airplane mode, whether the
22 location services were turned off, whether it was put in a
23 Faraday bag. And quite frankly, Mr. Lally, I don't know if
24 they did all that, if the location data were to remain or
25 not. I've never tested that. But all indications, it would

1 have had location data on the day that it was seized,
2 because we received the Apple map tile, but when I got the
3 full extraction, there was no location data there.

4 Now, I did observe --

5 Q So there was no GPS location data on the defendant's
6 phone, correct? From what you observed?

7 A And, again, if I'm --

8 Q All I'm asking you is --

9 A There was -- I did find deleted location data from
10 April of 2022.

11 Q Okay. Now, with respect to the defendant's phone, did
12 you also find deleted web history data from the afternoon
13 of January, 29 2022?

14 A No, I'm sorry I didn't observe that.

15 Q Didn't observe it or didn't look for it?

16 A You know, I really don't have a recollection if I
17 specifically look for deleted data. I don't believe I did.
18 I don't know if I would have had to have a cause to.

19 Q Now, with reference to you were asked a question about
20 location accuracy within 3 feet, and you did some sort of
21 thing last night on CellHawk using that tool; is that
22 correct?

23 A Certainly.

24 Q And you were asked to do that after Trooper Guarino
25 testified yesterday; is that correct?

1 A I understand he testified yesterday.

2 Q And so with relation to you creating sort of that
3 document, and that's now been marked as an exhibit, was
4 that something that Mr. Yanetti asked you to do in relation
5 to Trooper Guarino's testimony yesterday?

6 A Well, in all fairness you need to ask Mr. Yanetti. I
7 can make an assumption here. I mean, if --

8 Q I'm not --

9 A I'm not trying not to answer you, you know, but I was
10 asked by Mr. Yanetti to perform that search.

11 THE COURT: So, Mr. Lally, please be cognizant of the
12 court reporter.

13 MR. LALLY: Yes, Your Honor.

14 Q So, Mr. Green, with respect to that 3 feet of accuracy,
15 are you aware that what Trooper Guarino was testifying to
16 in regard to that had absolutely nothing to do with phone
17 applications or anything to do with data from phone or
18 CellHawk or a tool or anything like that?

19 A No, I don't know the full extent of what Mr. Guarino
20 would have been testifying to.

21 Q And so you're not aware that his testimony was actually
22 in regard to reviewing cruiser camera video from the Canton
23 Police Department and photographs of where Mr. O'Keefe's
24 body was and then mapping that using GPS, latitude and
25 longitude --

1 MR. YANETTI: Objection.

2 Q -- based on that within a 3 feet accuracy?

3 THE COURT: The objection is sustained. Ask it
4 differently.

5 MR. LALLY: Sure.

6 Q Are you aware of any of what Trooper Guarino testified
7 to yesterday?

8 A What you're mentioning, I may vaguely be remembered.
9 Again, I'm not trying to not answer your question exactly.
10 My conversation with Mr. Yanetti can -- is -- is 3 foot
11 when it comes to GPS data, you know, can you tell 3 feet
12 from GPS data? And no, it's not known to be that reliable,
13 and particularly Apple location services. How that applies
14 to the trooper's testimony, you know, I can't say with
15 specificity. I'm happy to opine on location data, though.

16 Q There was no question before you, sir.

17 A Okay.

18 Q But that's -- thank you.

19 MR. LALLY: If I may have a moment, Your Honor?

20 THE COURT: Sure.

21 Q Now, sir, with reference to Safari and deleted tabs,
22 isn't it true that there is no way for a user to delete a
23 tab only to close it? Would you agree with that?

24 A Yeah. Well, when you -- when you close a tab, all
25 right, you're taking it out of the active state, and it's

1 going to an inactive state and some people could call it
2 deleted. Now, the Safari history allows you to go in and
3 delete history by certain date ranges, but you can also go
4 into specific websites that you visited and delete those.

5 Now, you -- if you want me to continue. The WAL file
6 itself, you can't open up a WAL file and say, I want to
7 delete that record, but functioning the phone to the user
8 interfaces will have an effect of deleting data within that
9 WAL file.

10 Q And isn't it also true that Cellebrite uses that red X
11 to annotate that the record is no longer active and has
12 been recovered that make it incumbent upon the examiner,
13 being you in this instance, to determine if it was actually
14 deleted, correct?

15 A Yes, sir. Thank you for asking. Yes.

16 Q That's all I'm asking, sir.

17 A Okay, all right.

18 Q And you stated in your affidavit, in your testimony,
19 that you use the Sanderson SQLite or SQLite Forensic
20 Explorer to examine the Safari tabs DB associated with the
21 -- with the WAL file log; is that correct?

22 A Yes, sir.

23 Q Now, in your analysis using that Sanderson Forensic
24 Explorer, was there an indication that "hos long to die in
25 cold" was found in the WAL file?

1 A Yes, sir.

2 Q Now, with regard to that, did you independently verify
3 the cause of that timestamp that you observed there?

4 A Yes, sir.

5 Q Now, is it your interpretation that the time stamp
6 means the search appeared at that time solely based on the
7 naming of the field in the database?

8 A No, sir.

9 Q Now, can a WAL file contain items that are so new that
10 they're not yet committed to the database?

11 A Yes, sir, that's the purpose of it.

12 Q So the WAL file holds the newest information until it's
13 merged to the database, including additions, deletions,
14 changes, all of those items, correct?

15 A That is correct.

16 Q Now, according to your affidavit, the device was in
17 active use between 2:23 a.m. and 2:31 a.m., and just to be
18 clear, I'm talking about Mr. McCabe's device, correct?

19 A Correct.

20 Q And what other searches did you see at that time and
21 where were they performed?

22 A I'm sorry, can you repeat that? I couldn't quite hear.

23 Q What other searches did you observe in that time frame
24 and where would they performed?

25 A Well, there were a number of websites, including the

1 "Raining Men" exhibit that we did. There was Ozone
2 Basketball I believe. There was Hockomock (indiscernible).
3 I can tell you that those similarly, the last entry with
4 those there is the browser state DB file. It's not at the
5 beginning. It's not at the end, and I have a couple
6 thoughts on why that may be in regards to Ms. Hyde and Ms.
7 Whiffin. I'm happy to share those with you.

8 Q I'm not asking you anything about that, sir.

9 A Very good.

10 Q What I'm asking is, is it possible for a change request
11 in the WAL to a SQLite database pertaining to one
12 particular field leaving the other fields as what they were
13 previously?

14 A And I want to answer your question as well as I can, so
15 can you repeat that one more time?

16 Q Sure. Is it possible -- is it possible for a change
17 request in the WAL to a SQLite database pertaining to one
18 particular field, leaving the other field as what they were
19 previously?

20 A I'm having a little trouble answering this. So if I'm
21 understanding correctly, when the WAL file gets written to
22 the database, could that have made the change ending with
23 this deleted record, is that the question? Am I -- I'm
24 sorry, I'm sorry. I want to answer you. I just --

25 Q That's okay.

1 A -- a little lost on how you're asking that.

2 Q Do you not understand the question?

3 A Sorry?

4 Q Do you not understand the question?

5 THE COURT: Why don't you move on, Mr. Lally.

6 MR. LALLY: Sure.

7 Q Is it possible that the URL field, which has the
8 website name, was updated to the newest search while the
9 time stamp retained the original search; is that possible?

10 A No, not the way, on this particular phone, in this
11 particular iOS, and also with the user interacted with it,
12 it would have been at the 2:27 or before the way this very
13 specific iOS was happening that is consistent with all the
14 other ones that I observed out there on the phone related
15 to specific web searches and activity.

16 Q So was it possible that the search for "hos long to die
17 in the cold" at 6:24 a.m. was the most recent search
18 completed in the tab?

19 A Well, not in that tab, but I certainly agree with you
20 that there was a second search done at around that time.

21 Q Now, is it also possible that the search that you
22 assert took place at 2:27 and 40 seconds in the morning is
23 the same as the search that took place at 6:24:51 a.m. for
24 that same search to have --

25 A That's inconsistent with the actual data I'm seeing on

1 this actual phone with this precise iOS version.

2 Q Now, as far as a search in Safari with the string as
3 far as the SMOTOT.apple.com included, is it -- do you
4 recall that search as far as being a suggestion from Apple
5 from the iOS as far as the search with how long to digest
6 food?

7 A Okay. I didn't hear your whole question, but I heard
8 the last part about how long to digest food. So I can opine
9 on that.

10 So my feeling on that is when the "how long to die
11 cold" was put in, that that was most likely an Apple
12 suggestion, and I've done some testing now. The time
13 period I'm doing my testing, I know it's after the fact
14 that this would have actually occurred, but as I tested
15 that on a live phone and using a Google search, I could see
16 that how long to digest food would come up. I also noticed
17 a -- the specific phrase, how long does it take to die from
18 hypothermia. So as we do this Google search, we try to
19 repeat what's being done, those are two suggestions that
20 actually came up.

21 Q And so that was something that was a suggestion and not
22 something that was actually searched, correct?

23 A Yeah, no, I -- and I know that's different from my
24 affidavit from about a year and a half ago --

25 Q That's what I'm about to ask you, sir.

1 A -- in all fairness but --

2 Q That's entirely different from what you wrote in your
3 affidavit, correct?

4 THE COURT: One person, Mr. Lally.

5 THE WITNESS: I'm sorry.

6 THE COURT: One person at a time.

7 MR. LALLY: Yes, Your Honor.

8 A Okay. So, yeah, in fairness, I want to give you the --
9 my best knowledge as I understand it saying here today
10 including after my review of Mr. Whiffin and Ms. Hyde's
11 report. So I want to do everything I can to shine as much
12 light and clarity on this as possible.

13 So as I repeated, you know, since that time, and did
14 the search, I would notice that that is one of the things
15 that would come up, and it would have a little picture of
16 like a dinner plate or something like that, and there was
17 actually a similar, if not the same, picture found in the
18 artifacts of that phone.

19 Q And so just to conclude, that's not what you said in
20 your affidavit that was actually filed under pains and
21 penalties of perjury with this Court, correct?

22 A Yes. And on that day, that is what my true and proper
23 belief was. Okay. It -- since further testing, I have
24 found that I now believe that that was probably an
25 automatic one, and if I've caused you any distress, I

1 apologize.

2 Q You haven't caused me any distress.

3 A Okay.

4 Q But what I'm asking, sir, is that you -- that's what
5 you filed because that's what you thought at the time,
6 correct?

7 A Yes, sir.

8 Q And subsequently, you've done further testing, and
9 that's shown that you were wrong, correct?

10 A That is correct.

11 Q Now, according to your affidavit, there was a search
12 for how long to digest food at 6:23:49 a.m. that precedes
13 the search for how long to die in the -- the misspelling
14 here would be the key -- clkd at 6:23:51 A; is that
15 correct?

16 A Yes, sir.

17 Q Now, is it possible that the how long to digest food
18 was a predictive suggestion from Apple rather than a search
19 entered by the user; is that also correct?

20 A I don't know. I don't know the answer to that. I
21 believe that it was -- if it had picked up an earlier
22 search from 2:27 of "hos long to die in the cold" and then
23 you went to retype it in, it may have then tried to give
24 you something similar at the 6:23 and 6:24 timelines.
25 Hopefully, that answers your question.

1 Q So steps -- going to Mr. O'Keefe's health data. Steps
2 doesn't necessarily mean that someone is physically taking
3 steps, correct?

4 A Again, the research has done for this is steps tend to
5 be a very accurate artifact.

6 Q So steps cannot also be coincided with, say, movement
7 in a car or other sort of movement of the phone as far as
8 the health data is concerned?

9 A Sure. Well, I did, geez, quite some time ago, do some
10 testing with an actual iPhone 11, the same make and model,
11 and took a drive and tried to see if it would register
12 steps. It did not. I sat in a chair and tried to duplicate
13 how I thought I would walk to see if it recorded steps. It
14 did not. I took the phone from the floor to the ceiling to
15 see if it would record a flight of stairs. It did not. The
16 only -- with that iPhone 11, same make and model that I
17 got, it was very consistent with me actually doing and
18 doing walking steps, and that was whether I had it in my
19 shirt pocket, my pants pocket, or clipped onto my belt.

20 Q That's your testimony?

21 A That is my testimony. Yes, sir.

22 Q Okay. Now, are you familiar with GPS native locations?

23 A Yes, sir.

24 Q And GPS native locations takes -- its data as far as
25 defining latitude and longitude from a number of different

1 sources, correct?

2 A Well, it -- true GPS, okay, it's going to take it from
3 the GPS network. What you may be thinking of is assisted
4 GPS, which the iPhone uses, and that assisted GPS will try
5 to -- it kind of does a crowdsourcing. So it will look at
6 cell towers, what's in range as far as like WiFis and a
7 number of other devices, try to get you an enhanced GPS
8 location, and give you the best data possible.

9 Q So it takes the GPS native locations within an Apple
10 iOS device, takes it from four different sources; isn't
11 that correct?

12 A It tries to get from a variety of sources, like I just
13 mentioned, not all would be available.

14 Q Now with regard, did you look at any GPS native
15 location data with regard to Mr. O'Keefe's phone?

16 A Yes, sir.

17 Q And would you agree then that the GPS native locations
18 didn't record any movement of that phone after 12:25 a.m.?

19 A Twelve twenty-five. You know, I would have to look at
20 the exhibit to see what the time of that last entry was. I
21 don't want to misstate something to you, sir.

22 Q Now, you were asked about sort of the elevation change
23 and three floors - ascending, descending, and saying that
24 you couldn't pinpoint a time period or within that 12:21 to
25 12:24 time period from the health data; is that correct?

1 A Correct. It happened somewhere within that time.

2 Q Could you pinpoint, more specifically, if you looked at
3 the GPS native location data?

4 A No. Well, we're talking Apple Health and GPS location.
5 So I'm --

6 Q You said you couldn't do it --

7 A I'm sorry. Which one are you asking about? Please --
8 please.

9 Q What I'm asking is you said you couldn't pinpoint it
10 within the GPS health data. What I'm asking is, if you had
11 looked at the GPS native location data, could you give a
12 more specific pinpoint --

13 MR. YANETTI: Objection.

14 Q -- as to where Mr. O'Keefe's phone was?

15 THE COURT: I'm going to allow that.

16 MR. YANETTI: May we be seen?

17 THE COURT: Okay.

18 (Sidebar commences:

19 MR. YANETTI: Mr. Lally did not do this intentionally,
20 but he called it GPS health data. I think he's either
21 talking about Apple health data or GPS location data, and
22 that was --

23 THE COURT: I heard him say -- I did not hear it as
24 GPS.

25 MR. YANETTI: Oh, that's what I heard.

1 THE COURT: Okay.

2 MR. YANETTI: So it's fine -- I don't have any problem
3 with him just restating the question. I just want to make
4 sure he's being given an accurate question. That's all.

5 THE COURT: Okay.

6 MR. YANETTI: Thank you.

7 end of sidebar.)

8 Q Now, to be clear, sir, you had indicated earlier in
9 your testimony that the elevation change from 12:21, 12:24,
10 you could not pinpoint where in that time period or
11 specifically where in that time period the elevation change
12 occurred, correct?

13 A That's correct. It's a time range, yes, sir.

14 Q So what I'm asking is, had you looked at that in the
15 GPS native location data, would you have been able to more
16 accurately or specifically pinpoint when that occurred?

17 A Okay. So the location are you --

18 Q Yes or no.

19 A -- looking for a yes or no? I'm sorry.

20 Q Yes or no.

21 A There was, yes, there was location data within that
22 time period.

23 Q And are you aware that Mr. O'Keefe's phone from the GPS
24 native location data was actually a half mile away from 34
25 Fairview Road at the time that it made those recordings in

1 the GPS Apple Health Data?

2 A Right. Yes, I understand he was using Waze and it had
3 made that recording. I understand that. That's why the
4 finding that three minute and one second offset brings into
5 serious doubt if that time was accurate, and when you apply
6 that to the location offset, then the Apple Health Data and
7 the GPS all aligns. Now, I cannot -- I have not decoded
8 Waze and found out what functions they were calling and all
9 that. And I don't mean to indicate that I have. I mean
10 that the latest version of Axiom is bringing that up as an
11 artifact and a time stamp related to Waze, and in the case
12 of here where minutes are important, I thought it proper
13 that I bring this to the attention of the case as it -- as
14 a possible explanation.

15 Q As a possible explanation?

16 A As a possible explanation, sir, yes.

17 Q Now, the three different clocks that you were talking
18 about, are you aware that those are actually associated to
19 power usage and not applications?

20 A Right. That power usage was directly related to the
21 Waze application.

22 Q So it's your testimony that those three plots apply to
23 the times in Waze; is that your testimony?

24 A I'm saying that the time stamps were directly related
25 to Waze. It was reported by Axiom. When you apply the

1 filter and say show me every other artifacts Waze, these
2 were artifacts that came up related to the Waze bundle. So
3 I guess you need to give it the weight it deserves. Like I
4 said, I've not decoded Waze. That's not something that has
5 been done, but I think we need to consider the three minute
6 offset as it applies to giving significance to the Apple
7 Health Data and the Waze GPS.

8 Q Now, turning to Ms. McCabe's phone again as far as the
9 search, what you indicated as last view time. Are you aware
10 that that is actually related to a time that it was
11 actually focused on the screen as opposed to your
12 interpretation of it?

13 A I'm aware that from that that appears to be the last
14 state -- time and date it was focused, and when it was no
15 longer was focused, that's when the timestamp was written.
16 That's what's consistent with the other data on this
17 particular phone on this very specific iOS.

18 Q Now, with regard to looking at this search, you
19 mentioned that you used something called an ArtEx tool; is
20 that correct?

21 A Yes, sir.

22 Q And are you aware that's a -- that's a tool that was
23 actually created by Mr. Ian Whiffin?

24 A Absolutely.

25 Q And with regard to -- with regard to this specific

1 issue, as far as how this interpret -- this data is being
2 interpreted from the browser state DB versus the Knowledge
3 C database and the WAL file and all of those -- the P list
4 and all of those other kinds of things, as far as the
5 misinterpretation of the data has then caused Mr. Whiffin,
6 in further versions of Cellebrite, to revise that so that
7 this kind of error can't occur?

8 A Sure. Happy to answer that. So Mr. Whiffin's testing
9 was not done with this specific version of the iOS. The iOS
10 has been known to be changing the way this artifact works.
11 To do proper analysis, the researcher that he is, he would
12 have need to work with that same iOS. Now, in regards to
13 the Cellebrite question, they have two versions of the
14 Cellebrite Physical Analyzer. One is the standard physical
15 analyzer that's been out for several years now. Probably
16 is the majority use in the community. It's a tool that
17 takes that raw data and it puts it into human terms that we
18 can look at and understand and write reports like you've
19 been seeing here. So they have the Cellebrite Physical
20 Analyzer that's out there. I believe it's 7.68, but don't
21 quote me on that. And then they have a new version that's
22 come out called Insights, and this operates more on where
23 you can put multiple cases in and that. It's only the
24 Insight version that they have bothered updating and no
25 longer reporting on that time. Their current physical

1 analyzer program, and I tested this a few days ago, still
2 reports on that search occurring -- well and that time
3 stamp.

4 So currently, Cellebrite is providing examiners, law
5 enforcement, and people worldwide with two different
6 versions giving two different results. That I can't speak
7 to more than that other than I've tested that and I see how
8 those programs are working now.

9 Q So my question, sir, yes or no, is, are you aware that
10 Cellebrite has had to modify their software based on
11 misinterpretation of data, as you've done in this case?

12 A Yes, with the asterisk they updated one of two programs
13 I think.

14 MR. LALLY: Nothing further, Your Honor.

15 MR. YANETTI: No further questions.

16 THE COURT: All right. Mr. Green, you are all set.

17 THE WITNESS: Thank you, Judge.

18 (End of testimony.)

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